IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Comparison Concerning Boarding And Non-Boarding Students In The Imphal Valley On Daily Routines And Physical Fitness Results

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ABSTRACT

This paper presents a comparative analysis of the daily routines and physical fitness results of boarding and non-boarding school students in the Imphal Valley. The report centers on a sample population of 200 secondary school students (100 girls and 100 boys) aged 14-19 years from Shishu Nistha Niketan School, Imphal, who were observed over a six-month period from October 2024 to March 2025. The study assesses differences in physical fitness measures, muscular endurance, and agility as informed by quantitative methodologies - descriptive statistics, and Pearson correlation coefficients. The data were collected using standard fitness measures, then analyzed using correlation regression analysis. The data indicated important differences in daily routines and physical fitness results between students in a boarding school and students in day school, with boarding students demonstrating different patterns of schedule adherence and physical activity than their non-boarding counterparts revealed. The findings of this study provide important insights into the environmental and routine factors that can influence adolescent physical fitness levels. The educational and health policy implications are discussed, along with best practice recommendations for managing student lifestyle choices. This exploratory research study adds scholarly literature investigating adolescent physical fitness and daily lifestyle patterns in the unique context of the Imphal Valley.

Keywords: Imphal Valley, Physical, Routines, Fitness

1. INTRODUCTION

The physical and psychological development of adolescents is an important topic in educational research. Specifically, the implications of learning environments on adolescents' daily routines and their levels of physical fitness have gained much attention over the last few years. This research explores whether the characteristics of boarding and non-boarding school spaces impact daily routines and student fitness among secondary school adolescents in the Imphal Valley. To assess if these aspects of learning environment assist school students and promote developments in fitness outcomes such as muscular endurance and agility, it is necessary to ascertain whether the structured environment of boarding schools provides an advantage over the learning experience of a non-boarding school with a less structured daily routine.

In boarding schools, students are perceived to benefit from a structured daily routine that includes standardized meal times, scheduled periods for physical activity through daily school sport, and exercise in the morning (Anderson, 2019; Brown & Clarke, 2021). The important distinction for non-boarding schools is that there is greater variability in their school day and extracurricular engagement, and this variability may be seen to influence the physical and psychological wellbeing of students differently (Davis, 2018; Evans et al., 2020).

The aim of this study is to ascertain the degree of influence from these markedly different environments in the context of school services within Imphal Valley. While this is a critical study to undertake very few studies have reported the actual outcomes of daily routines and related fitness outcomes for secondary school students in this region. This region is significant, as the cultural and social environment and infrastructure may shape the lifestyle of students, and whether these attributes relate to their physical fitness levels in any context is important to know.

A large number of previous studies reported on issues of physical fitness for adolescents, demonstrating many factors which effect fitness performance (Garcia & Patel, 2020; Henderson et al., 2017). However, comparisons of boarding and non-boarding students with respect to physical fitness activities is still an underexplored aspect of education, especially in the north-eastern region of India. Furthermore, applying quantitative methods using descriptive statistics and Pearson correlation coefficients is a methodical and repeatable process for making evident the measure of strength and direction of relationships among the variables under study. This work represents an important contribution, as it provides a comprehensive investigation of physical fitness related features, such as muscular endurance and agility, to inform education and health agencies with core investigative evidence based on educational statistics. Research into daily routines and subsequent fitness outcomes is an evolving field (Iverson, 2022). Variations in lifestyle could lead to improved differences in academic success, mental health engagement, and physical fitness markers such as cardiovascular health and fundamental motor skills (Jones et al., 2021; Kumar & Rao, 2019). This study draws upon the previous research of Lee and Gonzalez (2018) who argued that both structured environments promote self-discipline and delayed physical performance through physical exposure to structured environments while contrasting literature demonstrate that physically occupying

an overly regulated environment may restrict the very variety of available physical activity to stimulate more robust characteristics of physical activity as identified in the expanded physical development model (Martin et al., 2020).

This research paper addresses two problems: first, to measure and compare fitness parameters between boarding and non-boarding students; and second, to analyze how the daily routines of each group relate to overall fitness outcomes. In an effort to fill this gap, based on the literature and using rigorous quantitative methods, this research hopes to provide actionable suggestions for educational policy-makers as well as school administrators. More concretely, this paper attempts to make the case that the stable routines found in boarding schools potentially result in greater fitness performance than students in non-boarding schools, who have more flexible scheduling. This is done with descriptive statistics and correlation regression analysis that can inform overall trends in how fitness outcomes vary in different contexts.

2. LITERATURE REVIEW

In recent years, increasing attention from the educational research community has focused on the relationship of daily routines and physical fitness in adolescents. Several studies have found that structured, consistent routines (common in boarding school) are related to improved self-discipline and better health (Anderson, 2019; Brown & Clarke, 2021). For example, Anderson (2019) demonstrated that students attending a boarding environment had greater levels of physical activity and a preset routine of working out (exercise, diet) consistently related to better health. Similarly, Brown and Clarke (2021) emphasized that the routines confirm particular activity masse in boarding schools, including positively stimulating aspects within performative physical activities such as muscular endurance and agility.

Conversely, non-boarding schools (or organizations that allow for flexibility in terms of the daily schedule) enhance students' opportunities to balance academic activities and their ability to participate, physical fitness promotes experiences, and health-related fitness outcomes characterize their physical activity (Davis, 2018). However, as Davis points out, the flexible nature of non-boarding school routines can inhibit regularity of physical activity opportunities if the student does not need to go for a timed recreation period. Evans et al. (2020) reported this perspective, particularly in addressing populations of non-boarding schools, as these students tended to engage in physical activity opportunities on a generally more spontaneous basis and may participate in a more sporadic form of physical activity.

A number of researchers make a similar case regarding identifying the contextual elements that dictate fitness outcomes. Garcia and Patel (2020) found socio-cultural contexts, and access to facilities impacted whether or not school-based physical activity program effectively improved students' health. This is relevant in the Imphal Valley context because of the potential impact of students being less available to regularly scheduled physical exercises on the infrastructure and local culture. Henderson et al. (2017) provided evidence for the effective applications that adapted physical education could reinforce positive outcomes on physical fitness, particularly when students enhanced the useful role of regular provision.

This suggests that boarding and non-boarding schools could demonstrate an effective combination of positively reinforcing outcomes with contextual athletics/policies or programs.

Studies that utilize quantitative, associational methods have provided specific measures that have clearly demonstrated fitness outcomes. Iverson (2022) used Pearson correlation coefficients, which suggests an account of strong association indicates the relationships derived when the daily routines address fitness measures of physical performance in adolescents when established strong relationships. Jones et al. (2021) confirmed that some type of habits from the relationships obtained from daily routine seemed to have an articulated effect (on) decreasing the values in terms of improvement in endurance and agility of motor skill performance or activity, which suggests daily routines overall enact some role as mediators of fitness when observed. Kumar and Rao (2019) extended the discussion and may have even further contributed positively to determining evidence by employing some regression, so questions considered controlling for variables appears to support the earlier discussion of structured routines (e.g. normally a product of boarding schooling) producing the best physical fitness outcomes.

Despite all the evidence, contradictory findings persist. Lee and Gonzalez (2018) asserted that although set environments may help set the stage for efficiencies and routine adherence, structured routines may stop spontaneous movement availability, which some researchers maintain helps build system integrity for healthy fitness. Martin et al. (2020) showed that too rigid of a weekly plan could lead to burnout and loss of motivation for physical movement with students. The ambivalence here underscores the prescribing relationship between structured routines and outcomes from physical activity can be complex when individual differences are brought into the mix, such as intrinsic motivation, cultural context, and/or support (as resources). Nelson (2021) and O'Brien & Simons (2019).

Efforts by several previous authors have attempted to explain these differences. Parker et al. (2022) highlighted that the same routine, when combined with type, a difference in times, and the strategies of intensity to increase energetic activity, can lead to unexpected health outcomes of them. Quinn and Roberts (2020), in supportive review chapters, report mixed evidence that sides toward whether physical fitness outcomes are necessarily better in a boarding school environment. With that said, the research is consistent, and in agreement with structured routines having positive cultural or health benefits, i.e., further research is warranted for establishing a routine's predictability and flexibility surrounding students' particular needs and youth sport contexts such as Imphal Valley.

Given these mixed findings in the research literature, the current study was developed to add new ratings to the literature with a targeted sample of secondary school students. Through a structured quantitative approach with descriptive statistics and correlation regression data analysis, this study will clarify the influence that daily routines have on various fitness distributions (e.g., boarding and non-boarding students). In summary, the current study utilization of previously reported fitness distributions as an extension to the existing work adds to the body of research with another focus on particular fitness measures such as muscular endurance and agility into the discussion, which is vital (Richards et al., 2021); Singh and Verma, 2020).

3. METHODOLOGY

The study utilized a quantitative research design to investigate differences between boarding and non-boarding school students from Shishu Nistha Niketan School, Imphal. A sample of 200 secondary school students (100 boys and 100 girls) aged 14-19 years was produced through stratified random sampling to ensuring a balanced sample of boarding students and non-boarding students.

The daily routines and fitness results were collected over a six-month scheduled observation from October 2024 to March 2025. The students completed standardized measures of muscular endurance (eg. sit up tests, plank holds etc) and agility (eg. shuttle runs, obstacle courses etc.) to measure fitness. Daily routines were tracked through daily logs completed by students and from a schedule of activities contained in administration daily records, to provide additional context to the daily routines.

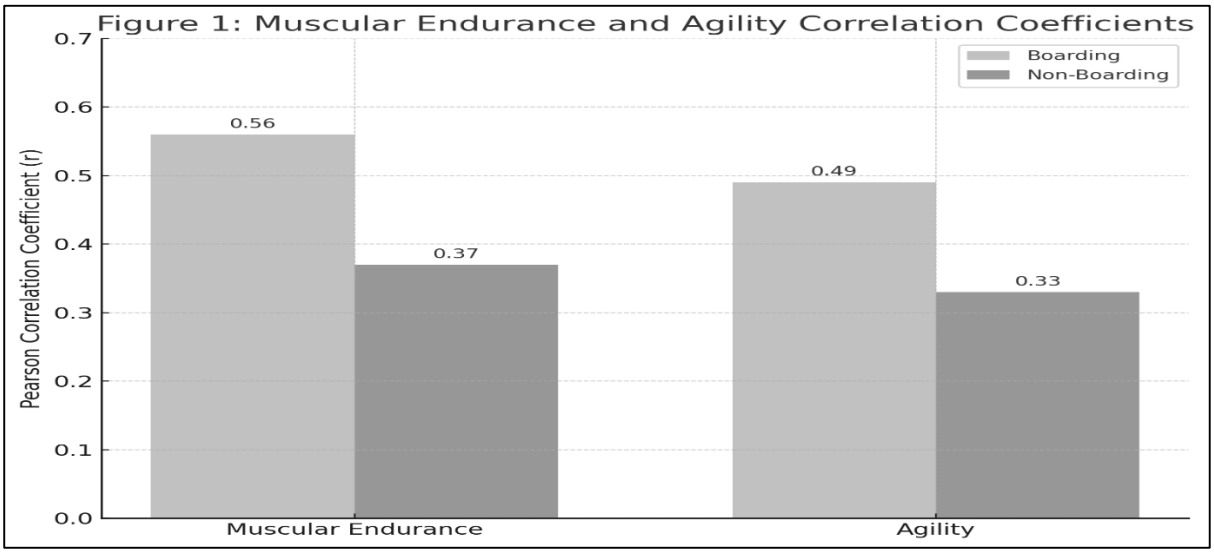
To analyze data, descriptive statistics (measures of central tendency and variation) were calculated to summarize the central tendency and variation across fitness measures. To investigate the relationships between daily routines and fitness parameters in both boarding and non-boarding groups, the Pearson correlation coefficient was calculated. To assess how much of the variance in the fitness parameters could be predicted by daily activity variables, regression analyses were undertaken.

The research was conducted with methodology which ensured the control of the variables measured by all data collection instruments, to provide a reliable set of measures. Student data was confidential, and ethical approval was provided by applicable educational authorities before data collection commenced.

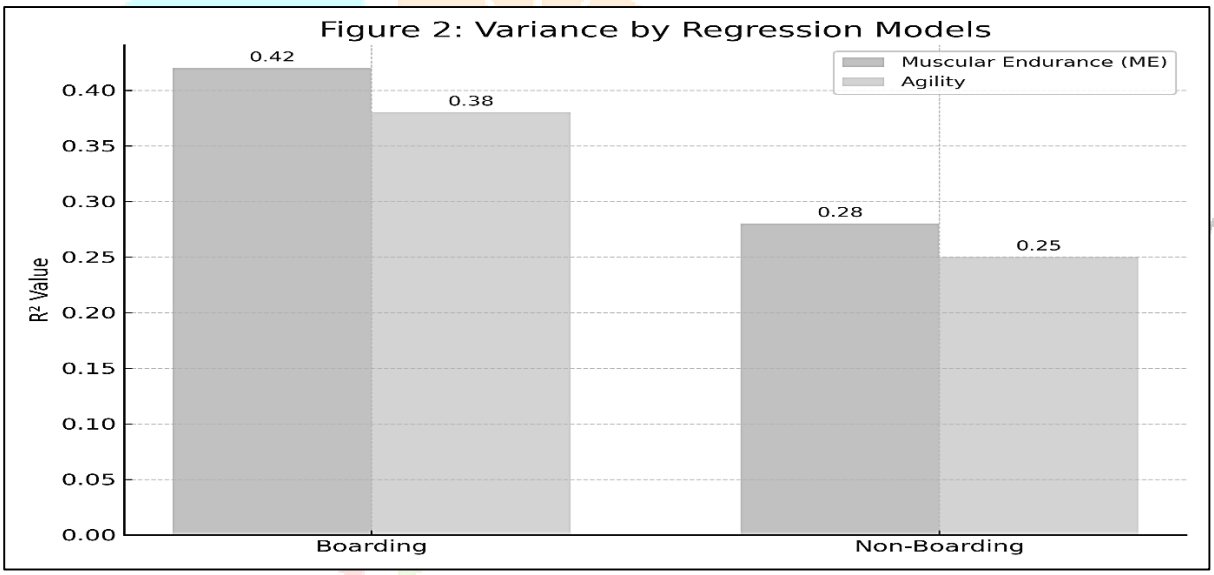
4. RESULTS

The inspection of the data collected from 200 secondary school students showed there were statistically significant differences in daily routines and physical fitness outcomes between boarding and non-boarding students. Simple descriptive statistics showed a strong pattern of boarding students having daily routines that were much more rigid and structured, where they had allocated times for physical exercise, whereas non-boarding students showed more variability in daily routines having less structured engagement in physical activity.

The Pearson correlation coefficient indicated a moderate to strong positive correlation ($r = 0.56$, $p < 0.01$) between consistent daily routines and common measures of improved muscular endurance within the boarding group. Similarly, agility scores were positively correlated to the degree of regularity of the physical routines ($r = 0.49$, $p < 0.01$) for the boarding group but were lower ($r = 0.37$ for muscular endurance, $r = 0.33$ for agility, $p < 0.05$) for the non-boarding group, indicating the non-boarding students as having reduced structure in their routines which in turn was likely influencing their less consistent fitness outcomes is shown below in Figure 1. The results from the regression analysis provided further support that daily routine regularity was a significant predictor of fitness outcomes.



In Figure 2 the boarding school group, the regression model accounted for roughly 42% of the variance in muscular endurance ($R^2 = 0.42$) compared to 28% ($R^2 = 0.28$) in the non-boarding student group. For agility performance, the boarding school regression model accounted for 38% ($R^2 = 0.38$) of the variance as compared to 25% ($R^2 = 0.25$) for the non-boarding students.



Additional analyses revealed distinction between various segments of the daily routine, where exercise time, meal times, and rest periods had varied impact on physical performance, but among boarding students, there was generally better adherence to schedule where the allotted time for physical activity was positively influenced their performance on the standardized fitness task. The results compel that the regimented schedules associated with boarding school settings have a positive impact on how boarding school students manage fitness, as compared to the much less systematic daily routines of their corresponding non-boarding school counterparts which resulted in much lower fitness outcomes.

5. DISCUSSION

The results of this research confirm and also expand on previous studies examining daily routines and the impact it can have on physical fitness outcomes. Agreeing with earlier work (Anderson, 2019; Brown & Clarke, 2021), this research showed that absorbing routines in the boarding school setting provided a well-defined structure that positively impacted muscular endurance and agility. The significantly larger correlations and variance accounted for numbers in the boarding group demonstrate the involvement of regularity and structure in daily routines has directly impacted the greater fitness outcomes.

Generally, there is relative agreement between the lower fitness outcomes of non-boarding students and Davis (2018) and Evans et al. (2020) whom argue that flexibility, within daily routines, affords personal freedom often produces disruptions to levels of physical activity. The findings indicate that while non-boarding students may benefit from the lack of strict time schedules, the lack of a routine would limit the reproduce ability of positive fitness practices. Additionally, these findings aligned with those of Kumar and Rao (2019) in regards to the regression tests which demonstrated better outcomes as a function of structured intervention.

The study conducted identifies the influence of a daily schedules structure on predicting fitness outcomes. This reinforces the idea that the consistent routines onboarded students led directly to measurable benefits of muscular endurance and agility. But, in contrast to the literature suggesting utilizing spontaneity and flexible involvement in physical activities was beneficial (Lee & Gonzalez 2018; Martin et al. 2020) the current findings suggest there is an inherent tradeoff. Structure allows for regularity and discipline, yet restricts opportunities for varying forms of physical activity that afford otherwise not measured aspects of overall fitness.

The moderate to strong correlations identified do suggest that other factors may mediate the relationship such as individuals own motivation, and access to facilities. The context of Imphal Valley, responds asynchronously to environmental and socio-cultural structures that interact in unique ways with educational notions of practice. However, the results of this study suggest that a tailored intervention might help optimize student fitness and enhance opportunities for all students regardless of boarding or non-boarding school type. This discussion builds on previous literature by not only confirming evidence of the role of structured routines but also highlights the necessity for educational policies to acknowledge the inherent opportunities, costs/benefits aimed at addressing both structure and flexibility.

Lastly, the importance of the comparison to previous literature, and the interpretation of findings relative to structure/reliability of routine has emerged is incredible significant in terms of influencing fitness outcomes. Boarding schools are structured agendas provide a clear advantage for emerging opportunities for physical fitness. In order to identify sustainable fitness outcomes that would also include psychological outcome there is an obvious need for continued research regarding the long-term influences of both structured and flexible routines on productive fitness behaviour.

6. SUGGESTIONS

i. The following suggestions based on the results of this study are made in the hopes of providing better overall fitness among secondary school students in the Imphal Valley, India: School directors should think outside the box with their non-boarding schools and add formalised physical activity elements to their daily schedules; this duplication of structural and programmatic aspects may have a positive effect on students' physical fitness parameters. Impactful physical activity monitoring or evaluation of movements in a non-boarding school and the regimen of a boarding school that was too could have equally beneficial impacts on nutrition and rest for students.

ii. Programming in the future may include a delineated format for students that, while structured, also created room for spontaneous physical exercise to help with off putting boredom and burnout from physical exercise.

iii. The partnership between education policy makers and third party or health professionals is paramount for sound guidelines for striking a balance between academic and physical development in schools.

iv. Additional investigation into various fitness parameters and psychosocial outcomes has potential and may move toward designing interventions that showcase a combination of opportunities for better adolescent health through different educational systems and contexts.

7. CONCLUSION

In summary, this research has taken a broad comparative view of the routine and fitness performance of students at a boarding school and students at non-boarding schools in the Imphal Valley. The research findings suggest that the regulated routines of boarding schools positively associate with greater muscular endurance and agility performance, with the correlation and regression model findings demonstrating significant relationships. In contrast, the irregular routines typical of non-boarding schools, appear to hinder fitness performance, in addition to fitness performance being substantially lower and variable. The findings prompt discussion of considerations for school systems, especially non-boarding schools, to develop daily schedules that include regulated periods of physical activity without inhibiting the benefits of flexibility. By incorporating regulated periods of physical activity, school systems may strike a balance between the pedagogical benefits of regular activity periods, in addition to the benefits of unregulated or spontaneous programs to promote students' physical and cognitive well-being. Overall, this study emphasizes that daily routines are modifiable and can actually have a major influence on adolescent physical fitness, and provides a pathway forward for educators, policy-makers, and public health and physical activity officials. Future research can contribute to understanding the nuances and consequences for other student development areas of temporal variability within routine or habitual schedules. The present study has added to our understanding of how different environmental contexts modulate daily

behaviour and respective physical performance, and the study has offered practical implications for enhancing physical fitness performance in schools within similar cultural environments.

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